Appropriate Interpretation and Recommendations Based on GFTA-3 Results

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- [Amy] And at this time, it is a pleasure to introduce Shannon Wang this afternoon, who is presenting Appropriate Interpretation and Recommendations Based on GFTA-3 Results. And this webinar is being presented in partnership with Pearson. Shannon Wang is a Senior Research Director with Pearson. Her areas of expertise include linguistic theory and universal grammar, early childhood language development, and communication issues related to culturally and linguistically diverse populations. Working at Pearson, Ms. Wang has published speech assessments, including the Goldman-Fristoe Test of Articulation Third Edition, the Khan-Lewis Phonological Analysis Third Edition, as well as language assessments in the self-product line, PLS product line, the Peabody Picture Vocabulary Test Fifth Edition, and the Expressive Vocabulary Test Third Edition. So welcome, Shannon. Thank you so much for joining us today.

- [Shannon] So hello, everyone. I hope you can hear me well. It's a pleasure to be here talking about GFTA-3. GFTA-3 now has been out in the field for about four years, and we continue to get plenty of questions. So, I'm hoping that I can answer those questions for you today. Before we move on to the presentation itself, we do have some disclosures. So, I am employed by Pearson Clinical Assessment, which is the publisher for GFTA-3, and today's presentation will focus solely on GFTA-3. No other articulation assessment will be discussed during today's session. So, the learning outcomes that I'm hoping to share with you, the information so that you'll be able to at the end of this presentation be able to list at least three kinds of GFTA-3 data that can be used to make diagnostic decisions and inform recommendations for services. Also, to explain how comparing the GFTA-3 emergence and mastery information to standard scores will help you determine if a child has a speech sound disorder. And lastly, to describe one example of how recommendations for services can differ when a speed sound error pattern are based on not just the data obtained from standard scores, but obtained from multiple pieces of evidence, such as the home or classroom participation. There's also an intelligibility study that we'll be talking about. Moving on.

So, we'll start with an overview of GFTA-3 administration and scoring. As I said, GFTA-3 has been out in the public for about four years now, and we continually get questions, such as these. So, one of them is that the GFTA-3 scores and GFTA-3 scores seem to be or can be different. And what would cause those scores to be different? Well, some of the general ideas are that in GFTA-3, all sounds are counted within the raw score, not just selected from the sounds of selected words, but every single obligatory context, and that would be consonants and consonant clusters. The other thing that could result in slightly different test results are that the sounds in sentences was revamped. So, while it's still a connected speech test task, it's moved from a sensory call to a sounds imitation format. The reason we did that was two-fold. One is that this way, it was easier to generate these connected speech from children, rather than what many have said, it was like pulling teeth to get children to recall the sentences, the story itself.

And also, because we were able to change to a sounds imitation format, we were able to produce an intelligibility rating, which gives you, like we were saying, an extra piece of data to look at how that child is performing, speech-wise. Okay, one thing we do want to talk about in the sounds in sentences, unlike the sounds in words, we did select certain words. Not all the words within the sentences will be counted, but certainly certain words.

The other thing that we talk about quite a bit is that we have updated norms, and those updated norms are based on a sample of children that's more diverse than the one that was used 15 years in GFTA-2. That diversity, well, what we would say is the developmental trajectories are the same in speech sound production. The diversity of the sample causes a difference in the norms. Okay so, again, these are following up the concerns that we've heard throughout the last four years. One is that, hey, you have words in there that are sensitive to assimilation processes. For example, we use the word guitar, and we're aware that children will say titar, or yellow, it's very common to

hear a child say lello. Another concern that clinicians have expressed is why are you using such complex syllable shapes, such as vegetable or elephant or pajamas or princess? Especially with the word pajamas. We will often hear a child say jamas instead of pajamas. And we will, I'll explain this further on in the presentation. There's also the concern that we have a huge high representation of some later developing sounds, such as R, S, and L, not so much S and L, but R really trips up some children, and we are going to definitely talk about that later on. A question that we get quite a bit that at first glance seems very confusing is the idea that sounds in sentences is a much more difficult task than sounds in words.

So, why is it that some of these children that clinicians are testing receive a higher sounds in sentences standard score than in sounds in words? Again, these are concerns that we've heard throughout the last four years that we're happy to address today. Okay so, just to get for some background information as to how did we select the words that those into the GFTA-3 word set? Well, we wanted in this new GFTA-3, we wanted to make sure that administration time stayed the same, or that it was reduced, and the reason is because GFTA-3, one of the popularity that it's always had is that it's a short, quick test, and we did not want that to go away. It's considered a bonus and we wanted to keep that going for us; however, that isn't the only thing. The other things that we talked about that we wanted to target as criteria or that we wanted multiple occurrences for most of the sounds.

For example, in previous editions, we've had clinicians say, "Hey, you only target the sound here." Let's say, initial S. "And they got it wrong, "but then you have another word later on "that as initial S that they got right. "So really, I don't feel really comfortable "saying the child doesn't have it, "when they show evidence of having it in another word. "It's just that that word wasn't counted." And so, what we did this time is we moved to obligatory contexts so that there are multiple occurrences for each sound and each position if at all possible, and then we would count each time that sound

showed up, so that we didn't have that confusion. The other thing we did was we had a range of complexity, and this again goes back to, "Why do you have words like elephant and vegetable?" And it is because we wanted to model our word set on what was representative of the Standard American English. So, it's true that it may be easier for children to produce certain sounds in a consonant vowel or a consonant vowel consonant word shape; however, we know that as children age, we start at two, six, running all the way through eight, nine, 18, that they're not going to just be encountering consonant vowel and consonant vowel consonant words. They're going to be, hopefully, producing words that have very complex word structures, and that's what we wanted to represent, real world practices. Again, words that were familiar to a diverse population of examinees. As we've said, here in the United States, we are getting to become more and more diverse, and the populations you serve, the children you serve, will become more and more diverse, and so we wanted to make sure that the words that were represented were words that were familiar to a large population.

So again, as I like to say, it's not like pulling teeth. Also, we went through a lot of developmental phases and what happens is we wanted to minimize dialectal variations. And dialectal variations, often when we talk about it, we think about words that are influenced by maybe Mandarin or words that are influenced by Spanish. But surprisingly, there's a lot of dialectal variation within English, what we think of as Standard American English. One of my favorite words that we started in with was sandwich, but what we found out was there are so many variations, sandwich, sammich, sangwich, that caught me off-guard, but we came up with, after six dialectal variations for the word sandwich, the decision was no, we can't have that word. I'll maintain, and all this is considered, but our primary thing was that we still needed to have excellent psychometric properties, and what we mean by that is that the words needed to fit together so that we can show that there is still consistent developmental progression across each of the ages as we would expect. For example, we will not expect development progression of an R coming in before a B. So, when we make sure

that was still true for all the words we picked and that contributes to the internal consistency and lastly, the clinical utility. So, when we started this, we had over 300 words, we came down, and we weren't going to give you 300 words. What was happening is we wanted to see how those 300 words, which words were going to show us the best discrimination differentiated performance between children that were typically developing and children who are having difficulties with producing speech notes. So, that's the background of how he decided to choose those words. There are some scoring differences.

Again, this presentation is about, why are my scores may be a little different? The scoring is different. So as we've said before, score every occurrence of every consonant and every consonant cluster. We now also take into account dialectical responses. So if you know, and you have evidence that one of the children that you are testing speaks a dialect other than standard American English, you're not going to count those speech term productions as being correct. You will give those speech sounds credit for being correct on the basis that they are a dialectical variation. So, here's just some examples that we're going to go through of what that record form looks like, if you'll see, to the right hand, you'll see three columns and within those columns you'll see every single sound that's represented, and you will put a slash through for an error of those sounds. Here's a better example. So, like in the word vegetable, they didn't say it. That means that every single sound, every single consonant sound is going to be slashed through as an error.

Okay, so getting back to dialects. How do we score it? Well, we do know is this. You're going to transcribe it so that for your record keeping you know that there was a difference in what the child said versus what the target sound really is; however, you're not gonna count it if it's a dialectical influence. So, some examples would be English influenced by Spanish. It's very common for the S H to be produced rather than a C H. So in the word cheese, you may have sheese instead. I actually worked with a

colleague who does exactly that, I get used to it, so I know, and I just put that CH in and I give her credit for that. Another dialectical difference that you'll often encounter is Africa-American English and Southern English. So, in a word like ring, instead of that that NG you may hear the N instead. This is especially true for words that use the ING, the present progressive ING at the ending, because it then becomes not brushing, but it becomes brushin'. And then, English influenced by Asian languages. I can just tell you. I have my L and my R, but my mother certainly doesn't, and so when she says red, she doesn't say red, she says led, and if I were to give her the GFTA, I would have to score that one as correct, the R. We do use a diacritical markings to capture distortions, this question has come up.

A lot of times that comes up in association with dialectical variation, so we decided to talk about it here. So, marking the difference. GFTA-3, you have the option of either doing a paper administration and using a paper record form, if you do that, you will place the diacritic marks right onto that form right next to the word that you transcribe. If you are using our digital platform, which is QNR Active, that's the one where you have two iPads and one iPad that faces the child serves as the stimulus or picture book, the other one is where you can do the administration and capturing up the scores. On that one, what you're going to need to do is open up the notes box and write that diacritic mark right in that space that's provided. Okay? Now, this is also coming up.

When do I use the direct critic mark and when don't I? And if I do use it, do I count it as an error or don't I? And the answer is kind of complex. The answer is, well, it depends. So, if the child produces the sound that's different than the target, and it's due to dialectical variation, like we said, count it correct. Another thing is that if the child articulators are misplaced during the production, but yet the sound comes out acoustically accurate, you're still going to count that sound as correct. Only count the sound as an error if you're using a diacritic mark, to note a difference in production. So

for example, if they dentalize an S, you're going to put that diacritic mark a dentalized S. There's a little leakage of that sound, and so you would count that as an error. Okay, moving on to sounds and sentences. Like I said, it is a structured task, and it is different than the story retell. So, this is an example of what it looks like. Like I said, there are only targeted words that you're going to count, not the entire sentence itself. So, here three friends are walking home from school. You want the child to produce the entire sentence; however, you're only going to account for walking and school, the sounds that are in walking and school. Those were the sound when we took a look at the sentence and looked at our data that made the most difference in performance between children who are typically developing their sounds versus a group of children who were indicated to have a speech sound impairment.

So, that is the first part of it. The second part, if you read just below the sentence is the intelligibility rating, with one being good, two being fair, three being poor, and four is if the child did not produce that sentence; and this is a new part for GFT-3, and let's show you how that works. So, what you're going to do is, on this example, you can see that there's an intelligibility rating associated with each sentence production. What you'll do is, as you go along, you'll see circle what you thought the child did in terms, its a subjective scoring based on your impression. And so you'll say, "yeah, "that sends the child, "I could understand every single word, "I got what the point was, "I'm going to give it a good versus a two "is, yeah, I understood most of it, "it was a fair production."

So again, you're going to circle all those, and then you're going to tally it up, and what you're going to do is you're going to count the number of ones against the overall rating. So in here, if you look at the bottom, I had a total of 18 good ratings, and there were 20 sentences in all, so I take 18 divided by 20, which gives me 90. What I did to get that percentage is I multiplied by 100 and I got 90%. If then you can go to appendix C in the manual, and you can do a comparison. In this case, for a child this

age, I know that roughly 17, 18% of children are going to get an intelligibility rating that is less than 90%, but about 82, 83 are going to have intelligibility at or greater than 90%. So, this child is doing okay. She's right there. This is something new to GFTA-3 that we're really proud of because it really helps you look at the data not just from a standard score perspective, but it's a merchants versus mastery in terms of when does the sound comes in? When should we expect that sound to start appearing versus when do we expect that sound to be mastered? And by mastering we're talking about at least 85% correct each time that sound is produced, and what we do take a look at is this, For emergence, this is what you'll see on a record form, and it's also in the appendix in the manual, and what it is is you will see mastery, I'm sorry, emergence and mastery tables separated by sex.

So, there will be a emergent mastery table for girls, and then there will be a margins and mastery table for boys, and how it works is that we went for the emergence table, we looked at our sample, our standard is standardization sample, and looked at 50% of the sample, when did they first make that sound, or there was evidence of that sound? We also looked at it at when did 75% of the sample, Were they able to indicate that that sound was coming in at least once? And then at 90%? For the mastery table, what we looked at is 90%, when did 90% of our standardization sample, were they able to produce those sounds 85% or better of the time?

And why is that important? Why are we proud of it and why is that important? It's important for the interpretation. We're going to move on from here. We already talked about this. So, it's important because if we look at speech sound production charts, Hallmark ones such as this one, what we know is this, speech sounds, they don't just not show up and then show up with the blink of an eye the very next day. It takes time, just like any other language skills, speech sound skills also take time for children to practice, and then for to show up practice and then to mature to a mastery level, as you can see here, and that's how its represented by the bar charts. Again, some of

those bars are shorter because some of those sounds are easier to produce, with the articulation and the voicing and such, and so you will see a shorter development time versus some sounds are very long, up to five, six years from the time that it may appear to the time that a child really gets it right every single time. And, you know, some clinicians that we've talked to are under the impression, we hear this quite a bit is, "hey, a child doesn't have to get "R until they're eight, "until they're seven and a half or eight," and that's absolutely true. Our data shows that support that that a child does not have to master the R until they're seven and a half or eight years old, but look at the trajectory. The trajectory shows that they have about five, six years between the time that they start making that R to the time where they master it, and so that is why we wanted in GFTA-3, to show emergence and mastery to see is it showing up? And is that child's going to get that time that he or she needs to fully develop that sound accurately? Okay. Before we go on to that, because I have a whole section on that, I do want to address a question that we're asked quite a bit, and that is on sounds and sentences, and the question we get is, again, why do we sometimes get a sound and sentences score that's higher than sounds and words, when we know that producing sounds in a word should be an easier task than that running speech and producing that sound in a sentence?

Well, it has to do with that, typically, developing children are going to make more errors on sounds and sentences because it is a more difficult task than they will on sounds and words. So, what happens is when a child with a speech sound disorder makes errors or more errors on speech sounds and sentences than they do on sounds and words, it's not going to be as noticeable when we're comparing standard scores because their performance is going to be more like those typically developing children's performance, and because of that, you would end up with, you could possibly end up with a standard score that's a little bit higher. The analogy that I like to use, not in language, but in math, is this. If you had a child in first grade, that was asked to do multiplication. The typically developing child is going to look at you and

say, "huh? "I don't know multiplication," just like a child who has specific learning disability in math would say, "huh? "I don't know multiplication," and that's perfectly understandable Because in first grade, I think you're still doing arithmetic in terms of addition and subtraction; however, if you asked that child that has the math impairment to count one through 10, and he's in first grade, and he can't do it, that is a notable difference, and that's what we're talking about. In sounds on the word, you would have a notable difference of the child did not make, let's say, a T, an initial T, at age six, whereas we know in our speech song trajectory that typically developing children should not have any difficulties making that T, and because the scores are based on a typically developing sample, that is where that variation, you're going to see it right off the bat.

Okay. Now, this is the piece that, again, we really focus in on on GFTA-3. This is the piece that has really changed and that is the we use the data that we collected to look at emergence and mastery. Again, what we did is we reported emergence based on 50% of the sample, 75% of the sample, and 90% of the sample being able to produce a sound correctly, at least one time, just one time, if they got it one time, there was evidence that, yep, it's going to come in. Mastery, on the other hand, is based on nine, we looked at 90% of the sample, where they're making 85%, that sound 85% of the time correctly, and we were able to do that, again, because we looked at every obligatory sound that was produced.

Okay, so these charts, they're complex. We're going to hone in on some of these, but I just wanted you to take a look. Remember the graph that I showed you, the bar chart that I showed you? This is supposed to be a replica of that. So, the very top bar, this is for P, so it's an early developing sound emergence. We were able to take a look at the data and show that, "hey, "as young as two to two and a half, "90% of that sample was able "to go pa, somewhere along the line, "they may not have gotten all the Ps, "but they were able to get at least one." The next section is on mastery and we are looking

at the progression, and so what I really want you to take a look at is it is a bar, right? It's just like a bar chart, like the ones that we showed you before, in the sense that it's not they get it, they show up at two, and it should be mastered at that time. There is some progression going on. Now, you'll probably notice that most of the progression is pretty steady. They start getting in at two, two and a half, and they master it around three. So, what happened with pajamas? Well, what happened with pajamas is that they said jammas, rather than pajamas, and so since they didn't say "pa", we had to count that as an error, and that's why for that word it took so long. Again, it has to do with phonological processes more than the articulation. Are we sorry we put it in 'just cause it kind of messed with our data? No. And again, we're not sorry you put that word in, simply because, again, we really had a goal of representing having each of the words represent what a child would encounter and everyday English.

Okay, OK. So that was for an early developing sound, such as P. This is the information we have on R. So, we have R that's vocalic R, such as in brother, the er there, or in a continental R, like in the word... What is a continental R? Like in the word frog, which is a continental cluster, but as you'll see, the progression is, again, it mimics or copies, supports the bar chart that we had shown you earlier, which is that it comes in at a certain time for emergence, but when we look at the mastery, it does take a while. So, here it shows that children start showing 75% of the time, 75% of the children and the standardization data were able to produce an R, whether it was a vocalic R or continental R, by the time they were two and a half to two 11, or close to three. So, it's coming in. We knew it was coming in, but look how much time it takes for them to master it fully. It goes from, let's say, two and a half all the way 611 close to seven. So, what we're showing, like we showed in the previous graphs, is that it does take some time. So, this is just, that chart was probably a little overwhelming, so this is just a snapshot of that for you to see, and why is this important? And this is important because we have clinicians calling into us saying, "there are too many Rs, "and don't need to know R. "Children do not need to know R until they're seven. "So now, I have

to put this child on my caseload "because they know every single sound, except for R." That is a very common occurrence. We're not saying that it's not what happens. That occurs a lot. We know a lot of clinicians work on R, but what we would suggest is this. Are you talking us that there was no R at all? This child maybe four, five, and there's no R? Are you saying there's some R, but it just wasn't mastered? What we would say is if there's some R, they shouldn't get a standard score that's that low. It's only when the child is not making any Rs, or that standard score goes lower, and we'll discuss that further and a couple slides, but what really we want to hit home is this. If there are no Rs when that child is four, and we understand that we don't need to have mastery at that time, we do need to start thinking about how we want to work with that child to get some R in, because if they're four, they've already lost two years in a long mastery timeframe. Two years, is a long time. Okay. So again, this is Rs.

We're just showing you. We were actually rather surprised, happily surprised, when we looked at the data and does it really matter whether it's a continental R or vocalic R, or if an R is found within a cluster, because we understand that that are factors in articulation, how those articulators are gonna move, and if that's going to trip it up, but what we found is, nope, if the child is going to start that R and figure it out, it doesn't matter what the context is. It can be in a consonant cluster situation, it can be in a singleton position, it can be a vocalic versus continental, that trajectory for development, from emergence to mastery flows along the same course. It's gonna start around two, two and a half, and it's going to end and be mastered around 611, seven at that time.

So, you can be confident that the literature has always been correct. When is it going to come in? When is it going to end? It's the interpretation that needs to be made, that it is for a long time, and that you can't wait until the child is seven if they are not showing any indications coming through, and that's why we decided to put in that we felt it was important to put in the emergence versus mastery, because it's not about

just that standard score. It's really about how long of a trajectory timeframe do you have with that child to work? Okay. So, this is another way to take a look at it. So, we will take a look at this. We know that children, when the sounds are starting to emerge, they don't have to be accountable for any mastery. So, this is based on mean number of phoneme errors on sounds and words, meaning that to get a standard score of 100, a child who is two to two and a half, they can miss anywhere from 67 or 68 words and still get a mean of 100. For males, their speech sound lags a little bit, so they can make 68 to 70 errors and still get a mean of 100. That's quite a bit, but we also know that's when emergence occur. We don't expect mastery. Look what happens later on when we get to an older age, so just six or seven, the number of errors they can make goes down to three, or two for a female, to get a standard score of 100 versus a male can make three to five errors and still get a standard score of 100. Quite a significant difference. And why is that? Again, it all hinges back to when we expect the emergence to occur versus when we expect mastery to occur. So, by the time somebody who's six, we expect there that most sounds will be mastered at that point.

Okay, looking at it from a different viewpoint, this is a case study that we have to present for a little boy named Omar. So, we looked at his speech sound production when he was two, when he was four, and when he was six, and how we take a look at it is if we looked at all his errors, he made 63 errors when he was two, he still got a standard score of 98. So, he's normal. And then, we take look at what would happen if he made every single sound correct, except for the Rs? You might think of my little obsessed with Rs, and it's because I am, in the sense that, for the last four years, I've been answering a lot of questions about Rs, and so most of my example, forgive me, if you're thinking, "why are you only talking about Rs?" But anyway, if we looked at Omar, and he got every sound correct, except for R, that would be 22 errors, because there are 22 occurrences of R in GFTA-3. If that's all he missed, he would get a standard score of 120, and why is that? And it's because we wouldn't expect R, it was it's just going to be emerging. So, if you missed it all, it's really not going to ding him at

all. Let's look at him at four. Again, he makes 22 errors this time around. That's saying that he still does not have any Rs. He can't get any of those Rs right. So, he has 22 errors. You know what? He still doesn't have to be at mastery. So, he still get up gets a pretty good standard score at 94. Okay. And then at six four, he still didn't get any Rs and look what happens. He goes down to a 75. Again, at this point, what we would say is we have case studies that we can take a look at, if possible, if we knew that at age six four, he was not going to get any Rs and get a standard score of 75. Maybe what we would have done is look at the emergence date and said, "at four four, he should have gotten at least one R. "Maybe we should start, "maybe not pull Omar in for one to one speech therapy, "but maybe try to see if he stimulable, "have him work on it, "not on a therapy basis, "but in the classroom with his family and such "to see if that was stimulable, "so that we wouldn't have to get to an age six "with no productions." Okay, this is another way to look at it.

So, what we didn't share with GMTA-2 was we had a supplemental norms booklet and we really wanted to make sure that our data was consistent, right between two and three, and that it really wasn't that we had an overdose of Rs in GFTA-3, and that was what was skewing the the norm north of scores. And it's not. So, if we take a look, the chart on top with what we circled is you could look at the means. So, the means represent at those ages, what children were able to do. Again, what we see is that for GFTA-2, at age two and age two six, there was evidence of R coming in for the initial position, the medial position, and the final position.

As you can see, by the mean scores a point three two, point four four, point six zero. So, what you can see is, it wasn't zero. If nothing was coming in, those would be zeros, but they're not. And then, what we see is the progression going through so that by the time that children hit six years, you can see that they were producing the Rs in initial, medial, and final positions at point nine in those ranges. So, that gives us confidence to really say, "speech production hasn't changed, "and GFTA in how they represent, "the

progression hasn't changed at all, "even when the sound for the words "representing those sounds, "we did change those up, "but the progression is still expected to be the same." Okay? Okay, so talking about that supplemental, this is just an example. So at six, what we would see is there's mastery there, and at our table, we see the same. It's consistent where those numbers lined up for those ages. Okay, so how does that really work? So remember, when we're talking about that we have these tables, either in an appendix in the manual or you can see them directly on the last page of the printed record form, and how did how does it work? So, we're moving back to Omar. We're looking him at him at four four, and what we do is we we highlight his age in that gray bar, and then we circle all the errors that he had. So basically, this is his speech sound profile. Now, we what we notice is this. Two things. One is he's having a lot of difficulties with Rs. In fact, he's not making any R. So in every single instance, when there was an R, it was circled, meaning that he didn't produce it, or he produced it and it was incorrect, but take a look at where they fall.

They fall all under the bar that's highlighted as four two, four five, which is his age at that time. So, what you would say is, "because this is the mastery table, "yes, don't worry, "he doesn't have to master them at all, "and that is why he gets a standard score of 94." But with that said, we've talked about it before, mastering some sounds, there's a very short trajectory, mastering some sounds or some very long trajectory. And so, when we know, taking the example of what we just did with Omar is, well, he got 94, he doesn't qualify for services, but what do we know about best practice? And what we know is this. A standard score, whether it's on a GFTA, or any other standardized assessment should never be the sole determiner for eligibility of services. I'm an advocate for assessment standardized assessments; however, that is one piece of the puzzle and only one piece. So, best practice says you're going to take that standard score from a GFTA or any other comprehensive assessment, and you're going to use that in addition to other comprehensive pieces or other pieces of data to have a comprehensive assessment. So for example, some of the things we want to do is look

at your phoneme inventory. What sounds does that child make? What sounds isn't that child make? Should they be making it? You mean, they're not making any Rs? Or why is it that they can make an R, but they can't make a T? That would be something to take a look at. Looking at correct versus incorrect phoneme productions and different syllable shapes and word context. Again, we would say, in the word pajamas, right? The P, why isn't that child making that P? Well, the child isn't that making that P, not because they can't make an initial P correctly, it's because, really, at a certain age, we know that weak syllable deletion happens all the time, and so they're dropping, they're not making the P and getting credit for the P due to weak syllable deletion. It's a form logical process. That is very common. So, we can then say, "oh, okay, that's fine "because it's expected, right?" Again, that falls into developmental patterns, like we said.

We understand about the phonological prophecies sometimes affecting the score that we give credit or non-credit on a certain sound, not because they can't make the sound, but because they dropped it completely for other reasons. Stimulability. GFTA-3 also has a stimulability, just like GFTA-2 did. Again, there's a difference between a child not making a sound at all and can't be stimulable for that sound versus the child isn't making that sound, but is able to imitate that sound with some help from you. That is a much better prognosis. Productions and connected speech. This, again, has to do with word context, right? So, it's much easier to make a sound when it's isolated than when it is in a word or when it's in a connected speech. Again, it's it has to do with motor movement, and the sense that those articulators have to go have to be coordinated and need to go at a faster rate in connective speech than when you're just saying, huh or oer, and then intelligibility and words and sentences. So, what you need to consider is this. Sometimes a child may have one or two sound errors that are consistent that is not going to impair intelligibility, and that is because you, especially you as a trained clinician, is gonna know, "oh, he's always substituting the L for an R," or "oh, he's always substituting a W for an R." So, your mind is going to know that, and so

intelligibility, this child's intelligibility is not going to be impacted, not so much for him or her, but because you know how to fill in those spaces, and why do we talk about intelligibility? And we do it because, again, it impacts social anxiety, academic performances, and such. So, all these need to be considered. You need to consider all these factors in addition to just that standard score. Okay. So, this is just to reiterate some of the things we talked about.

Again, spontaneous connected speech sample. You might want to interview the parent, talk to them and say, "okay, what's the child's behavior like at home?" Some parents have a lot of concerns, some parents do not. You don't know. So, it's best to ask, just like you would ask the teacher, the classroom teacher, about is the child's speech sound disorders impacting him or her academically, socially, emotionally, and such? And it's great to get those pieces of information through interview; however, nothing beats but you observing that child with his or her peers, with other adults, and such, and the reason we would say with adults, as well as peers is we know that adults, especially when peers are young ages, adults are going to be more patient, try to figure out what that child says versus young peers, they're not gonna have the patience to try to figure you're out. They're just going to give you one chance.

You either get it, what you're saying, or you're not, and they're going to walk away, and if that is the case, sometimes there's going to be some emotional impact to that, and social impact as well. And then, dynamic assessment to really identify some techniques that's going to help because therapy isn't a one time fix at all for every single person. You're going to have to figure out, do some work, and figure out how are we going to get the sounds out? I had a neighbor that I worked with, and all it took to work on those Rs was to have a set of Matchbox cars. I am a little older, and so I still remember the days of Matchbox cars, and I took mine out, and we rolled those R's to stimulate that R going, and you know, within six months, he could do the R, not for words, but at least to make those cars go. Okay. So, what are the options? Like we

said, if your standard score is showing that that child is okay, like you would with Omar, who got that standard score of 94, but you took a look at a lot of other things, and what are the other options when the standard score says, "I don't know if you can put this, "this child's not going to qualify, right?" Well, you can monitor the child's speech in the classroom to see for evidence that there is going to be an emergence that comes, take a look at that, again, do that recheck at six months to see if there's improvement or not. You could have a whole classroom articulation lab, whether this is formal or informal. Some classroom teachers really appreciate, especially when it's a preschool group, to have now coming in and talk about letter sound correspondence. So, maybe you could do it that way. This is the different ways to do that. Parents strategies. Try parent strategies. What we talked about is maybe having a worksheet that you could send home with parents to talk about. Don't do you know a formal, "okay, we're going to sit down for five, "10 minutes every day, "and have you produce R "and read all these words that have R, "read all these words K, whatnot," but really some strategies.

Like I said, as an example, I played with cars, I rolled cars on the carpet with my neighbor. Maybe you could do that, and hopefully stimulate that R going. I've seen others. I had a co-worker that worked in a preschool that had a farm on the campus, and so they would go out there and they were working on Gs and they would go go, go, go go. And then later on, they would go out and they would pick grass to feed to Gary the goat.

So again, even when that standard score doesn't qualify the child, that doesn't mean that you're left with no options. There are quite a few options that you could think about. Okay So again, this is Omar. We're going back to him, and this is an example of what we talked about, about it's just not based on that standard score. It is based on everything. So, we looked at Omar. He is stimulable for R. That's a good sign. His teacher says that he can understand his speech, which is another good sign for

intelligibility. Developmental considerations. The teacher says there are no valid concerns, so that's great. We don't have to worry about week musculature or whatnot. Did consonants develop in unexpected sequence? Yes. And then, also atypical speech patterns, we don't have to worry about that. His phonological processes are the ones that we would expect for somebody his age. So, those are all good signs. So then, what's the problem? And the problem is this. When we talk to Omar's parents, what they are saying is that his speech sounds a little babyish in comparison to his sister Rosie. So, you have Omar, the R there, the final R, and you also have Rosie, the initial R, and so the parents really want him to say R and how does that impact him?

So, what it really impacts is he's okay at school. It's not impacting him at school, but what's happening is that, in the home, Omar is trying to avoid talking because he doesn't want to be corrected for saying R all the time. And again, that goes, again, to that emotional impact. So, maybe no academic impact, but there is an emotional impact, and I think that is the message, right? Speech sound production may not, and if there's some errors that may not impact any children's in any areas, but it doesn't mean that, or it can impact in certain areas, but not all areas, and that is why we would want to do this and a complete assessment to see what was going on with the child. Okay. Okay. So with that, how do we explain these to the stakeholders?

And by stakeholders, these results to stakeholders, and by stakeholders, we're really talking about parents, teachers, administrators, and such, and it's a little different for different people. So, when we're explaining to parents, most of the time, I would say, when we talk to parents and teachers and explain speech sound production, and the developmental process, and what they can do in terms of strengths and weaknesses, it often lays and calms some of the anxiety. So in this case, we may say, when producing sounds, instead of just saying, "well, they got a standard score, "and they qualify, "or the standard score is really bad," it may be easier to say, "when producing sounds, "your child makes errors that children her age makes, "and we think it's okay, "and

she's able to imitate the sounds correctly, "which is a good sign. "Yeah, your child have some difficulties, "but we think that everything is going "in the way that we would expect it to go, "and we're just going to give this child "a little bit more time." This may be a better way than to say they scored too high and we're not going to give them services, again, to parents. So, you may want to say, "this is a parent expressing concern "that earned really low scores following therapy "on GFTA-2 versus GFTA-3 after treatment," and so what we would say is, "GFTA-2 and GFTA-2, yes, "they measure the same concepts, "but they are two different tests. "Most of the words on GFTA-2 are short and simple. "On GFTA-3, in this edition, "there are more complex words, "you also test every single incident, "so it gives you a more rounded picture, right?"

So, you want to talk about that, and then after you explain the differences between the two tests, l"et's take that off the table, "and let's talk about how your child's speech has improved. "So, let's not focus on the scores, "but think about this, "your child was not able to say, "T and D at all with accuracy. "They are now, "so that's good," or "did you hear any Rs before six months ago? "No. "Are you hearing Rs now? "Yes. "Are they all correct? "No, but you are hearing Rs, "and that is a positive sign." Explaining test results that don't match.

So this happens a lot. Clinicians, administrators are always talking about, "hey, the only sounds they don't get. "Why is it that they're only missing a couple of sounds "and they're dinged so badly?" So, what we would say is, there's a lot of reasons to earn a low score on GFTA, especially on later developing sounds, if the child is an older individual, like six or seven, and what would happen is that they're not living up to the norms, or they aren't comparable to typically developing children's development of those sounds, and again, this goes to administrators, as well. I think most clinicians we've talked to, they have very strict requirements on who gets services, who doesn't get services based on a score, and what we would say is the child doesn't produce

sounds, such as R, S, and TH, and any of the words that were tested. What we want to say is this. Yes, that gives them a low academic score, or no, it doesn't if the child is younger, but what happens is this. There is going to be academic impact that you are going to need to account for. The child's errors are going to negatively impact intelligibility, it's going to affect how that teacher understands, as well as responses. There's going to be some teasing, possibly, from peers because they sound babyish, and so then this individual becomes withdrawn, and may not participate as well in classrooms. So, regardless of the standard score, let's take a look at the overall impact of what's going to happen. Okay, so I think I am at the top of my hour. And Amy, do you have any questions for me?

- [Amy] We do have several questions., so we'll go ahead and start addressing those. Mikala is asking, going back to some, obviously, to some slides that were in the beginning of the webinar, does that mean that in the word vegetable there are five errors?

- [Shannon] So in the word vegetable, if the child did not say the word at all, you would mark as errors, the V, the juh, the tuh for the T, and the veg-tuh-ble. I'm counting off the top of my head. So, I think there are five. Let's see. Looking at the word, and it would be the V, the juh, the T, the B, and the final L. So, that is five.

- [Amy] Okay, great. Thank you. Danielle is asking regarding vocalic R variants, what do you recommend is the new mastery age for males versus females?

- [Shannon] So for mastery age, if we take a look, I'm looking at the last page of the record form and for you said male, correct? So, for a male, for vocalic R, if we take a look at the er in final position, it's between seven and seven 11. So, that really hasn't changed from 30 years ago when I took speech sound, but mastery is that, for girls, it is at the end of six 11. So, between six and six 11.

- [Amy] Okay, and then as a follow up to that she is saying, "students in our elementary school "are obtaining very low scores "if they are not able to produce R variants "in a correctly consistent manner. "This is for grades K through five." I think there's more to this. One second. We feel as though this is due to the increase in R words on this assessment. Just curious of your thoughts and explanation.

- [Shannon] So, this is a very good question that we get often and again, what we would say is that our standard scores are based on typically developing children, and what we notice is it doesn't matter the number of Rs, once they have mastery, like you said, around six, seven years old, once they know how to produce that R, whether it's about vocalic or consonant continental R, they will get it and they will make very, very few mistakes. So for individuals, for children who are making the R, yes, it is going to decrease their standard score, reduce their standard score, so it will look like they do need intervention. Again, if that intervention comes in a pull out, a one to one session, or whether you want to entertain another way to provide intervention, that's up to you, but what we are signaling is compared to typically developing peers, it does not matter how many Rs. Once they get R, they get R, whether it's R that's tested once, or its R tested 22 times.

- [Amy] Okay, great. Thank you for that explanation. Okay, next question is from Erica. Is a TH for S ever considered a dialectical difference in Spanish from Mexico? Is an interdental lisp still defined the same in Spanish?

- [Shannon] So for, I think, it's two different questions. So, if a child you know you would say is speaking standard American English or mainstream American English, and you have an interdental lisp for an F, yes, I would count that as an error because that is a deviation; however, if you know that that child is speaking a dialectal variation,

like you said TH for S, if that happens, and you can say without a doubt that that you know that child is is a dialectal speaker, then no, you should not count that as an error.

- [Amy] Okay, thank you. Is there any data or correlation between delayed emergence and delayed mastery?

- [Shannon] We will have to take a look at that. That is a great question. What we do know is that, so for mastery, our data indicate that over time between GFTA-2 and GFTA-3, when we look at the mean scores, mastery comes in roughly at the same time. When you are looking at whether it's one sound, like what we said in GFTA-2, each sound is only probed one time. So, whether you probe that sound one time in the data set or whether you probe in GFTA-3, that sound two, three, four, however many times, the data still line up to be mastery at that certain age, whether it's continental or vocalic. So, that is true in terms of emergence that lines up, as well. That is for looking at the data that is for typically developing children or children who have typical development and speed sounds. We have not looked at that in our clinical group. We have that information. So, you've brought up a great question that we can go back and look at our clinical data to see if it's scattered or if there is a pattern to it as well.

- [Amy] Okay, thanks. All right. This person is saying, "my client, 19 years old, has Down Syndrome. "Parents want to improve intelligibility. "I would like to focus on building functional vocabulary "to build familiarity with new words, "and hence, building client's self-confidence "to produce the target words or sound. "Your advice?"

- [Shannon] What I would say right off the bat is great for you. I think that is important, especially, we've talked a lot about about, it's not just sound production, but it's about the whole repertoire of academic performance, social interactions, emotional wellbeing, and such. So, if you think that targeting specific words to help with that, to help with words that your client is going to use on a regular basis for more intelligibility, that

would be great. That would help to get that child or that client more more confident, in interactions, knowing that those words that he says is going to be understood. I do have a caveat, and that is I haven't seen this person's entire speech sound profile, and I don't know the history, so I'm just speaking off the top of my head, but it sounds like you are heading towards the right direction, especially with an individual who going to have some motor, motoric development and planning, right. So, you may just want to hit on very specific words.

- [Amy] Okay, great. Thank you. We do have two more questions that if you could address that would be great. For any participant who does need to leave at this time, please feel free to log off. You will be given credit for the entire hour. If you have time to stick around for these final questions, certainly feel free to do so. Are you okay on time, Shannon?

- [Shannon] I'm great. Thank you.

- [Amy] Okay. So, just a couple questions. Participants are asking if you could review your explanation for for why a sounds in sentences score might be higher than a sounds and words score.

- [Shannon] Sure. Sorry, if I wasn't clear before. So, the reason a sounds and sentences standards score may be higher than a sounds and word standard score is this. So our norm, our standard scores, are based on the performance of a sample of typically developing individuals. So what happens is, when you take a look at this, typically developing individuals are going to be able to make the sounds within single words much more easily. So, there's very little variance, there's very little give, in the performance in that whole sample group. For the sounds and sentences, it is a harder task, and so there is going to be variance amongst the sample. Some are going to get it more easily than others and so there's more variance because there is more variance

that allows for somebody with a speech sound impairment to sneak in onto that variance, so that they may be at the very bottom of that variance and still look like they're doing okay, or get a higher score. So for example, on a word such as, let's see, in the word door, okay, with that initial D, we know that from our data, most of our kids can do the duh in door. 98% of them can do it by the time they're three. So, if you have a three year old. So, that's what sets that norm. So, if you have a three year old that can't do that D right off the bat, that's going to stick out. At the same time, when we go to sounds and sentences, and they have the word, let's say children, that D R combination from our typically developing sample, a lot of kids can't do it. Some can, some can't, but there's a wide variation, so that when you have a child who has a speech sound impairment and can't do that D, it's not going to stick out that, "hey, everybody else can do it. "Why can't you?" And that is why you may see a higher standard score, not because their skill set is better, but just because if you want to look at it the other way, a typically developing sample, their skill set is less.

- [Amy] Okay, that makes sense. That's a good explanation. And similarly, then why might you see standard scores on the GFTA-3 lower than standard scores on the GFTA-2? And I believe that is in reference to the sounds and words tests.

- [Shannon] So, on the sounds and words test, oftentimes you will see a GFTA-3 score that's lower than a GFTA-2 for a lot of reasons. One of the reasons is, and the biggest reason, I'm just going to focus on the biggest reason, is that on GFTA-2 you get one opportunity to make that sound. Let's say it is an R, my favorite sound is an R, and what happens is that child is emerging, and so the that child got that R right. Okay? And what happens is in GFTA-2, they say they got that, right. That's it, and they get credit, and they're treating it like a mastery, like they got it right, and they don't care about all the other sounds that might have R in it, In GFTA-3, what happens is, yay, you got that one occurrence right. It shows emergence. Let's take a look at all the other times when that child didn't get it right. And so, mastery may not be there. If you are a

child who's seven, and you have not mastered it, that is an area of concern, and that doesn't show up in GFTA-2, and that is why the standard scores may be buried, may be different between GFTA-2 and GFTA-3. The biggest reason, again, has to do with GFTA-2, the premise for GFTA-2 is they look at the sound once and treat it as mastery, and GFTA-3, they look at the sound, most of those sounds, they are going to take a look at it more than once, two, three, maybe more than three times, and what happens is they look at it in terms of emergence, and they look at it in terms of mastery, and if you have emergence, that's great, but if you don't have mastery, especially when you're an older individual, that's really going to show up in your standard score.

- [Amy] Okay, great. Thank you for that explanation. That helps. Right. Well, that does bring us to the end of all of our questions today. Thank you to our participants for submitting some great questions, and thank you so much, Shannon, to you for joining us today and explaining some really great details on the GFTA-3. It's always a pleasure to have you here. So, thank you so much for joining us today.

- [Shannon] It was my pleasure. Thank you very much.

- [Amy] All right, and I hope everybody has a great rest of the day. Take care, everyone.